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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,795

04/21/2006

Yoni Shiff

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EXAMINER

PHAM, TUAN

ART UNIT

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2618

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,795	Applicant(s) SHIFF ET AL.	
	Examiner TUAN A. PHAM	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12,22 and 24-33 is/are rejected.
- 7) ☒ Claim(s) 13-21 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, including claims 1-33 in the reply filed on 08/03/2009 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 04/21/2006 has been considered by Examiner and made of record in the application file.

Drawings

4. The drawing submitted on 04/21/2006 has been considered by Examiner and made of record in the application file.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-2, 4, 6, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art in view of Yuji Maeda (JP02001168812A) and further in view of Sung-Joon Moon (WO 03/013025A1).

Regarding claim 1, Admitted Prior art teaches an apparatus deployed within an indoor communications wireless distribution system located within an internal space of a structure, the apparatus comprising:

a radio base station or a repeater device comprising an external antenna and a bidirectional amplifier (see pages 1-2).

It should be noticed that Admitted Prior art fails to teach a central control unit for detecting and reducing interference within the indoor wireless network. However, Yuji Maeda teaches a central control unit for detecting and reducing interference within the indoor wireless network (see abstract and solution, it is clearly seen that the device of Yuji Maeda should be included a controller or CPU).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yuji Maeda into view of Admitted Prior art in order to improve the transmission and reception.

Admitted Prior art and Yuji Maeda, in combination, fails to teach an at least one antenna attenuation control unit for controlling the attenuation of an at least one

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internally installed antenna device, the at least one antenna attenuation control unit is associated with the central control unit; and an at least one internally installed antenna device for receiving and transmitting via the indoor air interface signal, the at least one internally installed antenna device is associated with the at least one antenna attenuation control. However, Sung-Joon Moon teaches an at least one antenna attenuation control unit for controlling the attenuation of an at least one internally installed antenna device, the at least one antenna attenuation control unit is associated with the central control unit; and an at least one internally installed antenna device for receiving and transmitting via the indoor air interface signal, the at least one internally installed antenna device is associated with the at least one antenna attenuation control (see figure 1, antenna 2₁₁, attenuator 2₂₁, pages 6-8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yuji Maeda into view of Admitted Prior art in order to improve the transmission and reception.

Regarding claim 2, Sung-Joon Moon further teaches the repeater device is a bi-directional amplifier mini-repeater (see figure 1, repeater 300).

Regarding claim 4, Sung-Joon Moon further teaches an at least one repeater attached to the at least one antenna attenuation control unit for enhancing the broadcast of the at least one internally installed antenna associated with the at least one antenna attenuation control unit (see figure 1, repeater 300, attenuator 2₂₁, pages 6-8).

Regarding claim 6, Sung-Joon Moon further teaches detecting is accomplished by commanding the at least one antenna attenuation control to attenuate the signal

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strength received from the associated antennas (see figure 1, repeater 300, antenna 2₁₁, attenuator 2₂₁, pages 6-8).

Regarding claim 11, Sung-Joon Moon further teaches the central control unit issuing at least one command signal to the at least one antenna attenuation control unit for disconnecting or attenuating the at least one internally installed antenna device (see figure 1, repeater 300, antenna 2₁₁, attenuator 2₂₁, pages 6-8).

7. Claims 3, 5, 7-10, 12, 22, and 24-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art in view of Yuji Maeda (JP02001168812A) and further in view of Sung-Joon Moon (WO 03/013025A1) as applied to claim 1 above, and further in view of Sousa et al. (US Patent No.: 7,054,301, hereinafter, "Sousa").

Regarding claim 3, Admitted Prior Art, Yuji Maeda, and Sung-Joon Moon, in combination, fails to teach omni-directional antenna. However, Sousa teaches omni-directional antenna (see figure 2, col.5, ln.58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Sousa into view of Admitted Prior Art, Yuji Maeda, and Sung-Joon Moon in order to improve the transmission and reception.

Regarding claim 5, Sousa further teaches detects the source antenna of the interference by sampling at least one uplink signal for the detection of interference (see col.2, ln.29-61).

Regarding claim 7, Sousa further teaches reduces or eliminates the interference by re-sampling the at least one uplink signal so as to reduce the level of interference to a value below a pre-determined interference threshold (see col.2, ln.29-61).

Regarding claim 8, Sousa further teaches reduces or eliminates the interference by commanding the at least one antenna attenuation control to disconnect or lower the level of transmission of the associated at least one internally installed antenna device (see col.2, ln.29-61).

Regarding claim 9, Sousa further teaches identifies the blocking of the transmission frequencies or an interference signal that is not a wireless signal by sampling the signal- by a coupler device without interfering with the transferred signal (see col.2, ln.29-61).

Regarding claim 10, Sousa further teaches samples the signal and identifies non-wireless signal generating interference (see col.2, ln.29-61).

Regarding claim 12, Sousa further teaches re-sampling the uplink signal for examining whether a detected interference is present or whether the strength of interference is above a pre-defined threshold (see col.2, ln.29-61).

Regarding claim 22, Sousa further teaches an interference detection unit for the detection of interferences in an uplink signal (see col.2, ln.29-61).

Regarding claim 24, Sousa further teaches an intermediate frequency surface acoustic wave filter unit to spectral energy of a noise signal in a specific frequency band; and at least one band width intermediate frequency band pass filter; and a multiplexer unit (see figure 1).

Regarding claim 25, Sousa further teaches recognizes an interference element in the uplink signal by examining the strength of the signal relative to a pre-determined interference threshold (see col.2, ln.29-61).

Regarding claim 26, Sousa further teaches converter is an analog-to-digital converter (see figure 1).

Regarding claim 27, Sousa further teaches recognizes an interference element in the uplink signal by examining the stability of the signal or the signal strength along a time axis (see col.2, ln.29-61).

Regarding claim 28, Sousa further teaches recognizes an interference element in the uplink signal by examining the spectral structure identified by the examination of the interference envelope at the extremities of the signal and the comparison of the detected envelope to the known structure of wireless signal (see col.2, ln.29-61).

Regarding claim 29, Sousa further teaches recognizes an interference element in the uplink signal by examining the power level of the signal across pre-defined time slots and the time slot intervals (see col.2, ln.29-61).

Regarding claim 30, Sousa further teaches recognizes an interference element in the uplink signal by examining the correlator of the base sequence of the control channel of the site (see col.2, ln.29-61).

Regarding claim 31, Sousa further teaches recognizes an interference element in the uplink signal by examining statistics of uplink levels of at least one previously made transmission, compared to actual uplink levels for detecting readings outside the base level determined over the time (see col.2, ln.29-61).

Regarding claim 32, Sousa further teaches recognizes an interference element in the uplink signal by examining the length of time between the start and ending of each interference signal detected (see col.2, ln.29-61).

Regarding claim 33, Sousa further teaches control command provides for the switching off or on of the at least one internally installed antenna device (see col.2, ln.29-61).

Allowable Subject Matter

8. Claims 13-21 and 23 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 13, the prior art made of record fails to clearly teach or fairly suggest the feature of the antenna attenuation control unit further comprising: a bias tee or a DC Inserter comprises a capacitor and choke for receiving a signal and associated at least one control command embedded in the signal from the central control unit through a signal path and for further separating a power component from an RF component of the signal and feeding the power component to the power supply unit; a coupler for sampling the RF component without attenuating the signal; a band pass filter for attenuating the frequency range of the RF component while maintaining the frequency range of the at least one control command; a decoder for decoding the at least one control commands and feeding the gain controller with the at least one control command; a gain controller for controlling the operation of the RF attenuator, and;

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an RF attenuator for feeding the RF component to the at least one internally installed antenna device as specified in the claim.

Regarding claim 19, the prior art made of record fails to clearly teach or fairly suggest the feature of central control unit further comprises: a bias tee for inserting power into the signal transmitted to the at least one antenna attenuation control unit; a high pass filter comprising a frequency selective circuit for blocking the transmission of at least one control command to the external antenna; a coupler for sampling the signal without degrading the signal or attenuate the strength of the signal; a splitter unit for transmitting the at least one control command to the at least one antenna attenuation control unit and wireless signal to a band pass filter; a wireless band pass filter comprising a frequency selective circuit for filtering the wireless signal; an interference detector for detecting of interferences; an antenna attenuation control unit controller for receiving output from the interference detector and activating the at least one antenna attenuation control unit; and a control band pass filter comprising a frequency selective circuit for passing the at least one control command to the splitter unit for combining the at least one control command with the wireless signal as specified in the claim.

Regarding claim 23, the prior art made of record fails to clearly teach or fairly suggest the feature of the interference detection unit comprises: a at least one splitter unit for splitting an at least one signal into at least two similar signals; an envelope detector for performing spectral analysis on the at least two similar signals and comparing the interference envelope with a predetermined wireless signal form;

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at least one converter unit for converting the at least two similar signals from analogue to digital form; a down converter unit for converting the at least two similar signals into an intermediate frequency; a digital signal processor for processing the at least two similar signals in analog form; a central processor unit for processing the at least two similar signals in digital form and for sending an at least one control command to control the attenuation of the at least one internally installed antenna device as specified in the claim.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Pham whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/TUAN A PHAM/

Primary Examiner, Art Unit 2618